

### **REMARKS**

This Preliminary Amendment cancels without prejudice original claims 1 to 11 and revised claims 1 to 9 in the underlying PCT Application No. PCT/DE2003/002333. This Preliminary Amendment adds new claims 12 to 31. The new claims are believed to conform to the U.S. Patent and Trademark Office rules and do not add new matter to the application.

In accordance with 37 C.F.R. § 1.121(b)(3), the Substitute Specification (including the Abstract, but without the claims) contains no new matter. The amendments reflected in the Substitute Specification (including Abstract) are to conform the Specification and Abstract to U.S. Patent and Trademark Office rules or to correct informalities. As required by 37 C.F.R. § 1.121(b)(3)(iii) and § 1.125(b)(2), a Marked Up Version Of The Substitute Specification comparing the Specification of record and the Substitute Specification also accompanies this Preliminary Amendment. In the Marked Up Version, double-underlining indicates added text and strikeouts indicate deleted text. Approval and entry of the Substitute Specification (including Abstract) is respectfully requested.

The underlying PCT Application No. PCT/DE2003/002333 includes an International Search Report, dated October 30, 2003. The Search Report includes a list of documents that were uncovered in the underlying PCT Application. An English translation of the Search Report accompanies this Preliminary Amendment. The underlying PCT Application No. PCT/DE2003/002333 includes an International Preliminary Examination Report. The German copy of the Report accompanies this Preliminary Amendment. The International Bureau should have an English translation of the Report which might be requested by the U.S. Patent Office.

Applicant asserts that the subject matter of the present application is new, non-obvious, and useful. Prompt consideration and allowance of the application are requested.

Respectfully submitted,

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By: Richard L. Mayer / Res No 47084  
Richard L. Mayer (Reg. No. 22,490)

KENYON & KENYON  
One Broadway  
New York, New York 10004  
(212) 425-7200 (telephone)  
(212) 425-5288 (facsimile)

**CUSTOMER NO. 26646**

METHODS AND DEVICES FOR TRANSMITTING AND/OR RECEIVING SHORT  
MESSAGES IN A FIXED NETWORK

FIELD OF THE INVENTION

The present invention relates to methods and devices for transmitting and/or receiving short messages (SM) in a fixed network, in which ~~an~~ a Short Message Service (SMS) signal to be transmitted is modulated by ~~FSK~~ (frequency shift keying (FSK)), and an SMS signal that is to be received and was modulated by ~~FSK~~ (frequency shift keying) is demodulated.

RELATED TECHNOLOGY

10 The ~~SMS~~ (Short Message Service), ~~already long known~~ (SMS), available from mobile radio communications, has also been offered for some time in a fixed network, e.g. as a service of Deutsche Telekom AG in its German fixed network. The product "SMS in Fixed Network", thus, the possibility of  
15 transmitting SM in a fixed network, is standardized by the Standard  
ETSI ES 201 912 V1.1.1 (2002-01) "Access and Terminals (AT); Short Message Service (SMS) for PSTN/ISDN; Short Message Communication Between a Fixed Network Short Message Terminal  
20 Equipment and a Short Message Service Centre" (European Telecommunications Standards Institute 2002).

~~According to the related art,~~ It is believed that the "SMS in Fixed Network" service can only be used with very special telephones, that is, ~~until now,~~ telephones specially designed  
25 for that purpose have been needed to send and receive SM in a fixed network. ~~There is no method and no device in the related~~

~~art which would permit the use of the "SMS in Fixed Network"~~  
~~service without special telephones.~~

The interface used for SMS in a fixed network is an analog or  
ISDN line, via which the signal, modulated by FSK (frequency  
5 shift keying) for transmission in accordance with  
ETSI ES 201 912, is transmitted at 1200 bit/s.

The indicated special SMS-capable fixed-network telephones  
each have a special hardware chip, in which the respective  
necessary modulation, demodulation and communications-control  
10 devices are configured hardware-wise.

#### SUMMARY OF THE INVENTION

~~The object of the present invention is to provide~~provides  
methods and devices which permit the use of the "SMS in Fixed  
15 Network" service at least partially even without the special  
telephones necessary for that purpose according to the related  
art. ~~This objective is achieved according to the present~~  
~~invention by a method as recited in Claim 1, a method as~~  
~~recited in Claim 2, a device as recited in Claim 6, a device~~  
20 ~~as recited in Claim 7 and a device as recited in Claim 8.~~

With the aid of the methods and devices of the present  
invention, more customers are able to utilize the "SMS in  
Fixed Network" service. The customers no longer have to rely  
so rigidly on the telephones needed according to the related  
25 art and provided with the indicated special hardware chip. The  
customers are thereby able to use the "SMS in Fixed Network"  
service more conveniently.

~~Advantageous and preferred further refinements of the methods~~  
~~according to the invention are the subject matter of Claims 3~~  
30 ~~through 5. Advantageous and preferred specific embodiments of~~

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~~the devices according to the invention are the subject matter of Claims 9 through 11.~~

~~In this context, the embodiment of the methods of the present invention according to Claim 4 and the specific embodiment of the devices of the invention according to Claim 10 are quite particularly preferred.~~ In the case of these designs, the end customer can easily fall back upon a voice-capable modem as is commercially available and already installed for a long time at a great number of end users. According to the embodiments of the invention ~~as recited in Claim 4 and Claim 10,~~ respectively, the "SMS in Fixed Network" service is now also able to operate via this voice-capable modem. The end customer thus ~~has the advantage that can,~~ to a great extent, ~~he/she can~~ fall back upon hardware components already at hand, thereby increase their intrinsic value, and reduce investment costs compared to the related art.

~~Exemplary embodiments of the present invention are elucidated in the following.~~

## 20 DETAILED DESCRIPTION

In ~~one~~an exemplary embodiment of a method according to the present invention for transmitting an SM in a fixed network, an SMS signal to be transmitted is modulated by FSK (frequency shift keying) by a suitably programmed computer.

25 One exemplary embodiment of a device according to the present invention is used both for transmitting and for receiving an SM in a fixed network, and is set up so that it is able to carry out the method just indicated. A software program available in the computer simulates the necessary signal behavior on the line. The function of the computer thus  
30 programmed is to transmit the signal, modulated by FSK

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(frequency shift keying) for transmission in accordance with ETSI ES 201 912, at 1200 bit/s.

In the case of the last-named exemplary embodiment of a device according to the present invention, the demodulation of the  
5 FSK signals and even the communications control are carried out by the indicated computer which is suitably programmed. For communication with an SMSC (Short Message Service Center), the indicated exemplary embodiment of a device according to the present invention is provided with a voice-capable modem.

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In further embodiments of the present invention, a method for transmitting a short message (SM) in a fixed network is provided in which an SMS signal to be transmitted is modulated by FSK (frequency shift keying), wherein the FSK modulation is performed by a suitably programmed computer.

A further embodiment provides a method for receiving a short message (SM) in a fixed network, in which an SMS signal that is to be received and was modulated by FSK (frequency shift keying) is demodulated, wherein the demodulation is performed by a suitably programmed computer.

Further embodiments of the invention described herein can include at least one of: a computer which at least partially takes over the communications control; the use of a voice-capable modem for communication with an SMSC (Short Message Service Center); and wherein the signal transmission takes place at a rate of 1200 bit/s.

Further embodiments of the invention provide a device for transmitting a short message (SM) in a fixed network, the device being set up so that, using FSK (frequency shift keying), it modulates an SMS signal to be transmitted, wherein the device has a computer which is programmed so that it is able to perform the FSK modulation.

Further embodiments of the invention provide a device for receiving a short message (SM) in a fixed network, the device being set up so that it demodulates an SMS signal to be received that was modulated by FSK (frequency shift keying), wherein the device has a computer which is programmed so that it is able to perform the indicated demodulation.

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- Further embodiments of the invention provide a device for transmitting and receiving a short message (SM) in a fixed network, the device being set up so that, using FSK (frequency shift keying), it modulates an SMS signal to be transmitted,
- 5 and demodulates an SMS signal to be received that was modulated by FSK (frequency shift keying), wherein the device has a computer which is programmed so that it is able to perform both the indicated modulation and the indicated demodulation.
- 10 Further embodiments of the invention described herein include at least one of: a computer which is set up so that it can at least partially take over the communications control; a voice-capable modem for communication with an SMSC (Short Message Service Center); and a computer having an ISDN card.

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WHAT IS CLAIMED IS:

~~What Is Claimed Is:~~

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# ABSTRACT

A device for transmitting and receiving a short message (SM) in a fixed network in which the device is configured to modulate an SMS signal which is to be sent by FSK (Frequency Shift Keying) and to demodulate an SMS signal which is to be received and which is modulated by FSK (Frequency Shift Keying). The device includes a computer which is programmed in such a manner that it can carry out said modulation and demodulation.

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